

## **REMARKS**

The present Amendment is in response to the Examiner's Office Action mailed June 17, 2004. Claims 7-13 are amended. Claims 1-23 remain pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

### **I. Drawings**

The Examiner objects to the informal nature of the drawings. In response, formal drawings have been prepared and are attached herewith.

### **II. Claim Objections**

Claims 7-13 are objected to under 37 CFR 1.75 (c) as being in improper form. Applicant has amended claims 7-13 to refer to refer to the other claims in the alternative only. Withdrawal of the objection is requested.

### **III. PRIOR ART REJECTIONS**

The Examiner rejects claims 1-6 under 35 U.S.C. § 103 as being unpatentable over *Onaka, et al.* (U.S. Patent No. 5,894,362) in view of *Ishikawa, et al.* (U.S. Patent No. 5,090,297).

Applicant respectfully traverses the rejection on the basis that the cited references do not teach or suggest each and every element of the rejected claims. Hence, the Examiner has failed to set forth a *prima facie* case of obviousness.

For example, independent claim 1 is directed to a method for performing OTDM (optical time division multiplexing) requiring a number of method steps, reproduced below for the Examiner's convenience:

a) generating  $n$  bit streams of approximately  $B$  Gb/s from respectively  $n$  tunable laser beams having respectively wavelengths of  $\lambda_1$ ,  $\lambda_2$ , ... and  $\lambda_n$ ;

b) generating from said  $n$  bit streams  $n$  group velocity dispersed bit streams by introducing group velocity dispersion into said  $n$  bit streams;

c) combining said  $n$  group velocity dispersed bit streams into a composite bit stream of approximately  $nB$  Gb/s; and

d) in response to misalignment of bits within said composite bit stream, tuning said  $\lambda_1$ ,  $\lambda_2$ , ... and  $\lambda_n$  to create the proper OTDM time differential between consecutive bits within said composite bit stream.

The Examiner, in paragraph 4 of the Office Action, admits that the *Onaka* reference does not teach the use of "tunable lasers" and that it does not teach step b (introducing group velocity dispersion into the bit streams) and step d of the claim, highlighted above. To address those deficiencies, the Examiner relies upon the teachings of the *Ishikawa* reference. However, this reference does not teach or suggest the presence of the missing elements.

First, *Ishikawa* does not suggest the use of a "tunable" laser in combination with the step of introducing group velocity dispersion, as is specifically required by the claim. Indeed the reference specifically teaches that one or the other would be used to optimize transmission

conditions, as is clearly demonstrated by the language cited by the Examiner, col. 15, lines 45-55:

Any of the examples thus far described use a **tunable light source** and optimize the transmission conditions by controlling the wavelength of the signal light to an optimum value with respect to the transmission line in use. **Conversely**, it is possible to use a signal light of a fixed wavelength, in which case the transmission conditions are optimized for that fixed wavelength by using a variable dispersion compensator capable of **adjusting the amount of wavelength dispersion**. Examples of such an optical transmission system will be described below.

Thus, while the reference suggests the techniques of using a tunable light source or adjusting the amount of wavelength dispersion, *Ishikawa* clearly teaches that the two approaches are alternatives for achieving an optimal transmission condition. Nowhere does it teach or suggest that the two techniques be used in combination, nor does it suggest that either of the techniques be used for providing OTDM, as is specifically required by claim 1.

Finally, while the Examiner suggests that *Ishikawa* teaches element d of claim 1 (. . . in response to misalignment . . . tuning [the wavelengths] to create the proper OTDM time differential . . .”), the Examiner provides no reference to *Ishikawa* that suggests this approach, nor is there such a teaching in the reference. Again, as demonstrated above, *Ishikawa* contemplates the use of a tunable light source, or the use of wavelength dispersion techniques on a single light signal to achieve an optimum value. However, nowhere does the reference teach the combination that is now claimed. For at least this reason, the Examiner has failed to set forth a *prima facie* case of obviousness with respect to claim 1.

In that all of the other rejected claims included similar limitations, and all of the remaining rejections rely on the combination of *Onaka* and *Ishikawa*, these rejections are also deficient and should be withdrawn. As such each of the pending claims is patentably distinct from the cited references and is in a condition for allowance.

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### CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 17<sup>th</sup> day of December, 2004.

Respectfully submitted,



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**Amendments to the Drawings:**

The attached three (3) sheets of drawings are replacement pages for informal Figs. 1-3 submitted with the original application. No changes to the drawings have been made.

Attachment: Three Replacement Sheets (Figs. 1-3)

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## **ATTACHMENTS – SUBSTITUTE FORMAL DRAWINGS**